PCT

U.S. Application No.

International Application No.
PCT/JP97/01025

Attorney Docket No.
TOYAM42.001APC

Date:March 17, 1999

09/147861

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 USC 371

International Application No.:	PCT/JP97/01025
International Filing Date:	March 26, 1997
Priority Date Claimed:	September 17, 1996
Title of Invention:	COATED POWDER AND COSMETIC PREPARED BY BLENDING THE SAME
Applicant(s) for DO/EO/US:	Kazuhiro Nishikata and Hirochika Nishimura

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. (X) This is a **FIRST** submission of items concerning a filing under 35 USC 371.

2. (X) This express request to begin national examination procedures (35 USC 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 USC 371(b) and PCT Articles 22 and 39(1).

3. (X) A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.

4. (X) A copy of the International Application as filed (35 USC 371(c)(2))

   a) () is transmitted herewith (required only if not transmitted by the International Bureau).
   b) (X) has been transmitted by the International Bureau.
   c) () is not required, as the application was filed in the United States Receiving Office (RO/US).

5. (X) A translation of the International Application into English (35 USC 371(c)(2)).

   a) () are transmitted herewith (required only if not transmitted by the International Bureau).
   b) () have been transmitted by the International Bureau.
   c) () have not been made; however, the time limit for making such amendments has NOT expired.
   d) (X) have not been made and will not be made.

6. (X) **SIGNED** Declaration and Power of Attorney of the inventor(s) (35 USC 371(c)(4)).

Items .below concern other document(s) or information included:

7. (X) An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.

8. (X) A FIRST preliminary amendment.

9. (X) International Application as published.

10. (X) PCT Form PCT/IPEA/401 and 409.

11. (X) PCT Form PCT/IB/308, 301, 304 and 332.

12. (X) PCT request form.

KNOBBE, MARTENS, OLSON & BEAR, LLP
620 NEWPORT CENTER DR 16TH FLOOR NEWPORT BEACH, CA 92660
(949) 760-0404 FAX (949) 760-9502

13. (X) A return prepaid postcard.

14. (X) The following fees are submitted:

				FEES
	BASIC FEE			$840
CLAIMS	**NUMBER FILED**	**NUMBER EXTRA**	**RATE**	
Total Claims	7 - 20 =	0 ×	$18	$0
Independent Claims	3 - 3 =	0 ×	$78	$0
	TOTAL OF ABOVE CALCULATIONS		$840	
	TOTAL FEES ENCLOSED			$840

15. (X) A check in the amount of $840.00 to cover the above fees is enclosed.

16. (X) Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). $40 per property.

17. (X) The Commissioner is hereby authorized to charge only those additional fees which may be required to avoid abandonment of the application, or credit any overpayment to Deposit Account No. 11-1410. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

KNOBBE, MARTENS, OLSON & BEAR, LLP
620 Newport Center Drive
Sixteenth Floor
Newport Beach, CA 92660

Daniel Altman
Signature

Daniel E. Altman
Printed Name

34,115
Registration Number

TOYAM42.001APC

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Nishikata, et al.	Group Art Unit Unknown
Int'l App. No.	:	PCT/JP97/01025	
Int'l Filing Dte.	:	March 26, 1997	
For	:	COATED POWDER AND COSMETIC PREPARED BY BLENDING THE SAME	
Examiner	:	Unknown	

PRELIMINARY AMENDMENT

Commissioner of Patents
Washington, D.C. 20231

Dear Sir:

Prior to examination of the above-captioned application, please amend the application as follows:

IN THE SPECIFICATION

1) Page 1, before the description, please insert --This is a 35 U.S.C. §371 application of PCT/JP97/01025, filed March 26, 1997.--.

2) Page 1, line 13, page 9, each of lines 5 and 9, page 11, each of lines 19 and 24, page 12, line 25, page 13, line 4, page 14, Table 1, footnote *2, *3, and *5, and page 15, line 4, please delete "titanium" and insert --titania-- therefor.

3) Page 14, Table 1, Comparative Examples 4, 5, and 7, please delete "Titanium-coated" and insert --Titania-coated-- therefor.

Page 6, line 11, please delete "titanium" and insert --hydrolyzate of titanium alkoxide-- therefor.

4) Page 8, line 18, page 11, lines 8-9, and page 12, lines 14-15, please delete "titanium hydrolyzate" and insert --hydrolyzate of titanium isopropoxide-- therefor.

5) Page 14, Table 1, footnote *6 and *7, please delete "iron" and insert --iron oxide-- therefor.

IN THE CLAIMS:

Please amend the claims as follows:

In line 1 of Claim 3, please delete "or 2".

In lines 1-2 of Claim 4, please delete "any one of claims 1 to 3" and insert --claim 1-- therefor.

5. (Amended) A cosmetic **[prepared by blending the]** comprising a pigment composed of a coated powder as claimed in **[any one of claims 1 to 4]** Claim 1, and a cosmetically acceptable medium.

Please add the following claims:

6. A method of producing a coated powder wherein a core powder is coated with at least first and second coating layers, said coated powder permitting nearly 100% total light transmission, the core powder having a refractive index of 1.3 to 1.8, the first coating layer of a material having a refractive index of 1.9 to 3.1, the second coating layer of a material having a refractive index of 1.3 to 1.8, said method comprising the steps of:

designing composition of the coated powder by determining a quantity of the first coating layer and a quantity of the second coating layer based on a correlation between the degree of linear transmission and the quantity of each layer, to impart a predetermined degree of linear light transmission;

forming the first coating layer in the determined quantity on the core powder; and

forming the second coating layer in the determined quantity on the first coating layer formed on the core powder.

7. A method of natural coloring on a surface by using a coated powder, comprising the steps of:

designing composition of the coated powder wherein a core powder is coated with at least first and second coating layers, by determining a quantity of the first coating layer and a quantity of the second coating layer based on a correlation between the degree of linear transmission and the quantity of each layer, to impart a predetermined degree of linear light transmission, said coated powder permitting nearly 100% total light transmission, the core powder having a refractive index of 1.3 to 1.8, the first coating layer of a material having a refractive index of 1.9 to 3.1, the second coating layer of a material having a refractive index of 1.3 to 1.8; and

applying the coated powder on the surface.

REMARKS

The claims have been amended and new claims have been added in conformity with U.S. practice. The specification has been amended to correct clerical errors. For example, page 1, line 13 reads "a **metal oxide** such as **titanium**" (emphasis added). However, when titanium is oxidized, it is commonly named "titania". Accordingly, in correction (1), the term "titanium" has been changed to --titania--. Further, page 6, lines 9-11 reads "the particles are then introduced into a titanium **alkoxide** solution, and **hydrolysis** is conducted to form a coating layer of **titanium**" (emphasis added). However, as a result of the reaction, the "titanium" should be named --hydrolyzate of titanium alkoxide--. Accordingly, the term has been amended in correction (3). The terms indicated in corrections (2), (4), and (5) have been amended in a manner similar to the above. The amendments do not constitute the addition of new matter to the application, and entry of the amendments is respectfully requested.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: March 17, 1999

By: Daniel Altman

Daniel E. Altman
Registration No. 34,115
Attorney of Record
620 Newport Center Drive
Sixteenth Floor
Newport Beach, CA 92660
(949) 760-0404

KOA-8990
031699

SPECIFICATION

COATED POWDER AND COSMETIC PREPARED BY BLENDING THE SAME

Technical Field

The present invention relates to a coated powder, and more particularly relates to the coated powder that accomplishes natural coloring without deteriorating lightness when it is used as cosmetics or paints, and to a cosmetic prepared by blending the coated powder.

Background Art

Conventionally, silica, titanium dioxide or silica having a metal oxide such as titanium coated on the surface thereof has been known as pigments for cosmetics or paints. However, although titanium dioxide has high screening effect, there has been the problem that if it is used in a large amount, unnatural whiteness is obtained or lightness decreases, thereby it is difficult to obtain natural coloring.

Disclosure of the Invention

The present invention has been made in view of the above circumstances, and has an object to provide a powder that accomplishes natural coloring without deteriorating lightness, and a cosmetic prepared by blending the same.

As a result of extensive investigations in view of the above existing circumstances, the present inventors have found that if a material having a refractive index of 1.9 to 3.1 is applied to a powder having a refractive index of 1.3 to 1.8 as a core, and a material having a refractive index of 1.3 to 1.8 is further applied thereto, linear transmission property of light at each wavelength can be freely adjusted by controlling a thickness of each coating layer; and since the total transmission amount can be maintained nearly 100% without substantially receiving influence of the coating thickness, when used as pigments for cosmetics, paints, or the like, a screening effect is not strong and lightness is not deteriorated, thereby natural coloring can be accomplished.

That is, the present invention provides a coated powder comprising (A) powder having a refractive index of 1.3 to 1.8 as a core, (B) a coating layer of a material having a refractive index of 1.9 to 3.1 on

the powder (A), and (C) a coating layer of a material having a refractive index of 1.3 to 1.8 on the coating layer (B). The coated powder of the present invention enables linear transmittance of light to be adjusted according to the purpose of use, has a high total transmission amount of light, and does not substantially deteriorate lightness.

Further, the present invention provides a cosmetic prepared by blending the above-mentioned coated powder.

The present invention is described in detail below.

The coated powder of the present invention can be prepared by applying a material having a refractive index of 1.9 to 3.1 and a material having a refractive index of 1.3 to 1.8 to a powder having a refractive index of 1.3 to 1.8 as a core in that order with known methods such as a sol-gel method and a spray drying method.

The powder used as a core may have plate-like shape, spherical shape or indeterminate shape, but spherical shape is preferable in order to allow light to diffuse and transmit uniformly. Particle size of the powder used as a core may appropriately be adjusted depending on the conditions such as particle size of the desirable coated powder and weight ratio between the powder as a core and a material which is

applied to the powder as a core as mentioned below. In general, the particle size of the powder as a core is preferably 0.05 to 45 μm, and particularly preferably 0.3 to 28 μm, although varying depending on the shape of the powder as a core. Further, the refractive index of the powder as a core is preferably 1.3 to 1.8, and particularly preferably 1.5 to 1.6. Examples of a material that can be used as the powder for a core include silica (refractive index n = about 1.54422), alumina (refractive index n = about 1.76-1.77), calcium carbonate (refractive index n = about 1.6585), and the like, and silica is preferable from the point of transmittance.

The material that is first applied to the powder as a core to form a first layer preferably has a refractive index of 1.9 to 3.1, and particularly preferably 2.1 to 2.6. Examples of the material that is first applied to the powder as a core to form a first layer include titania (refractive index n = about 2.493-2.586), zirconia (refractive index n = about 2.13, 2.19 or 2.20), and the like. The coating amount of this first layer can be adjusted depending on applications of the coated powder, but generally it may be about 1 to 50% by weight, and preferably about 5 to 30% by weight, based on the total amount of the coated powder. If the coating amount is less than 1% by weight, a screening effect is not

sufficient, and if it exceeds 50% by weight, lightness lowers, which are not preferable.

The material that is further applied to the first layer on the core powder to form a second layer preferably has a refractive index of 1.3 to 1.8, and particularly preferably 1.5 to 1.6. Examples of the material for forming the second layer include silica, alumina, calcium carbonate, and the like, and the silica is preferable from the point of transmittance. The coating amount of this second layer can appropriately be adjusted depending on applications of the coated powder, but generally it may be about 1 to 30% by weight, and preferably about 2 to 10% by weight, based on the total amount of the coated powder. If the coating amount is less than 1% by weight, the total transmission amount of light decreases, and lightness does not increase, and even if it is applied in an amount exceeding 30% by weight, further improvement is not obtained in the effect of increasing lightness, which is not economical.

The coated powder of the present invention generally has a particle size of preferably 0.1 to 50 μm, and particularly preferably 0.4 to 30 μm, although depending on its shape. Even if the particle size is outside the above-mentioned range, the effect by the coated powder of the present

invention can be obtained. However, if the particle size is within this range, it is easier to handle as pigments used for cosmetics, paints, or the like, and when it is blended into cosmetics, texture when applied is better.

In order to obtain such a coated powder, for example, an alkoxysilane is subjected to hydrolysis by addition of ammonia to produce spherical silica particles, the particles are then introduced into a titanium alkoxide solution, and hydrolysis is conducted to form a coating layer of titanium on the surface, followed by burning, or the like, thereby forming a coating layer as the first layer. This coated powder is further introduced into an alkoxysilane solution, the alkoxysilane is hydrolyzed to form the second layer, followed by burning, thereby producing the coated powder of the present invention. Formation of the second layer can also be conducted by a method in which an alkoxysilane solution is sprayed to the powder having the first layer, then the obtained powder is heated and dried. Further, commercially available silica powder can be used as the powder of starting material. For example, true spherical silica powder produced by the process described in Japanese Patent Application Laid-open No. 61-270201 and the like are exemplified.

The coated powder of the present invention can be

blended into cosmetics, paints, or the like. The blending amount of the coated powder may be appropriately adjusted depending on the purpose of cosmetics, paints, or the like.

In the cosmetic of the present invention containing the above-mentioned coated powder, form and application thereof are not particularly limited, and the form may be, for example, a solution-form, a milky lotion-form, a cream-form, an aqueous gel-form or the like. The application thereof includes foundation, control color, make-up base, eye color, face lotion, face milky lotion, cheek color, lip color, and the like. In addition to the above-mentioned coated powder, the cosmetic of the present invention can contain various components generally used in cosmetics such as aqueous component, oily component, surface active agent, moisturizer, thickener, coloring material, perfume, antioxidant, pH modifier, chelating agent, preservative, ultraviolet inhibitor, anti-inflammatory agent, whitening agent and powder other than the coated powder of the present invention.

The cosmetic of the present invention can be prepared in the same manner as in the ordinary cosmetics except for blending the coated powder.

Best Mode for carrying out the Invention

The coated powder of the present invention is explained by referring to the following examples.

Example 1

2 wt% aqueous ammonia was gradually added dropwise to a solution of 10 wt% monomethyl-triethoxysilane in ethanol, and the resulting mixture was stirred for 3 hours to produce spherical silica particle (particle size: 0.8 μm, and about 0.55 μm after burning). This particle was filtered off and washed with water, and then heated and dried at 300°C for 4 hours. The particle was cooled to the room temperature, and then introduced into a solution of 3 wt% titanium isopropoxide in isopropanol. After that, while stirring the resulting mixture under nitrogen atmosphere, 10 ml of isopropanol containing 5% water was gradually added dropwise thereto, thereby depositing titanium hydrolyzate on the surface of the particle. After filtration, the particle was washed with water, and then heated and dried at 300°C for 4 hours. This powder was further introduced into a solution of 10 wt% tetraethoxysilane in ethanol, and 1N aqueous hydrochloric acid was gradually added dropwise

thereto. The resulting mixture was stirred for one day-and-night to form a silica coating layer on the surface of the particle. The powder finally obtained was burned at 800°C for 4 hours to obtain a coated powder (I). Weight ratio of silica and titanium was obtained from a peak intensity ratio originated from titanium dioxide (TiO_2) by X ray diffraction in each coating stage. As a result, the ratio of silica (powder as a forming core) : titanium (first layer) : silica (second layer) of the coated powder (I) was 70:20:10. Further, the particle size of the coated powder (I) was about 0.6 μm after burning.

Example 2

True spherical silica resin powder (Tospearl 120, a product of Toshiba Silicone Co.,Ltd.) was placed in an electric furnace, and temperature was risen from the room temperature to 1000°C at a rate of 20°C per minute. After the powder was burned at this temperature for 6 hours, electric power was off, and the powder was spontaneously cooled to the room temperature to obtain true spherical silica powder (particle size: 0.85 μm). This silica powder was introduced into a solution of 5 wt% zirconium tetra-n-propoxide in isopropanol, and hydrolysis was conducted while gradually adding dropwise isopropanol

containing 5% water under argon atmosphere. The powder obtained was burned at 800°C to obtain a zirconia-coated powder. This zirconia-coated powder was introduced into a solution of 10 wt% tetraethoxysilane in ethanol, and 1N aqueous hydrochloric acid was gradually added dropwise, followed by stirring for one day-and-night, thereby forming a silica coating layer on the surface. The powder finally obtained was burned at 800°C for 4 hours to obtain a coated powder (II). Weight ratio of silica and zirconia was obtained from a peak intensity ratio originated from zirconium dioxide (ZrO_2) by X ray diffraction in each coating stage of the production in the same manner as in Example 1. As a result, the ratio of silica (powder as a forming core) : zirconia (first layer) : silica (second layer) of the coated powder (II) was 80:10:10. Further, the particle size of the coated powder (II) was about 0.9 μm after burning.

Example 3

2 wt% aqueous ammonia was gradually added dropwise to a solution of 10 wt% monomethyl-triethoxysilane in ethanol, and the resulting mixture was stirred for 3 hours to produce spherical silica particle (particle size: 0.8 μm). This particle was

filtered off and washed with water, and then heated and dried at 300°C for 4 hours. The particle was cooled to the room temperature, and then introduced into a solution of 3 wt% titanium isopropoxide in isopropanol. After that, while stirring the resulting mixture under nitrogen atmosphere, 10 ml of isopropanol containing 5% water was gradually added dropwise thereto, thereby depositing titanium hydrolyzate on the surface of the particle. After filtration, the particle was washed with water, and then heated and dried at 300°C for 4 hours. This powder was further introduced into a solution of 10 wt% tetraethoxysilane in ethanol, and then 1N aqueous hydrochloric acid was gradually added dropwise thereto. The resulting mixture was stirred for one day-and-night to form a silica coating layer on the surface of the particle. The powder finally obtained was burned at 800°C for 4 hours to obtain a coated powder (III). Weight ratio of silica and titanium was obtained from a peak intensity ratio originated from titanium dioxide (TiO_2) by X ray diffraction in each coating stage of the production in the same manner as in Example 1. As a result, the ratio of silica (powder as a forming core) : titanium (first layer) : silica (second layer) of the coated powder (III) was 85:5:10. Further, the particle size of the coated powder (III) was about 0.6 μm after burning.

Example 4

2 wt% aqueous ammonia was gradually added dropwise to a solution of 10 wt% monomethyl-triethoxysilane in ethanol, and the resulting mixture was stirred for 3 hours to produce spherical silica particle (particle size: 0.8 μm). This particle was filtered off and washed with water, and then heated and dried at 300°C for 4 hours. The particle was cooled to the room temperature, and then introduced into a solution of 3 wt% titanium isopropoxide in isopropanol. After that, while stirring the resulting mixture under nitrogen atmosphere, 10 ml of isopropanol containing 5% water was gradually added dropwise thereto, thereby depositing titanium hydrolyzate on the surface of the particle. After filtration, the particle was washed with water, and then heated and dried at 300°C for 4 hours. This powder was further introduced into a solution of 10 wt% tetraethoxysilane in ethanol, and 1N aqueous hydrochloric acid was gradually added dropwise thereto. The resulting mixture was stirred for one day-and-night to form a silica coating layer on the surface of the particle. The powder finally obtained was burned at 800°C for 4 hours to obtain a coated powder (IV). Weight ratio of silica and titanium was obtained from a peak intensity ratio originated from

titanium dioxide (TiO_2) by X ray diffraction in each coating stage of the production in the same manner as in Example 1. As a result, the ratio of silica (powder as a forming core) : titanium (first layer) : silica (second layer) of the coated powder (IV) was 87.5:2.5:10. Further, the particle size of the coated powder (IV) was about 0.6 μm after burning.

Table 1 shows light transmission data of the coated powders obtained in the Examples and the conventionally known powders as the Comparative Examples at 400, 500, 600 and 700 nm. Linear transmittance is obtained by receiving light passing through the powder at the immediate back thereof and measuring the amount of transmitted light. Total transmittance is obtained by measuring the amount of light transmitted while scattering in each direction, using an integrating sphere.

Table 1

	Linear transmittance (nm)				Total transmittance (nm)			
	400	500	600	700	400	500	600	700
Comparative Example 1 Monodisperse spherical silica (0.55 μ)	73	78	82	86	100	100	99	99
Comparative Example 2 Monodisperse spherical silica (1.4 μ)	58	66	69	72	100	100	100	100
Comparative Example 3 Silicic anhydride *1	8	9	10	12	93	93	93	93
Comparative Example 4 Titanium-coated silica *2	6	8	11	15	77	82	83	85
Comparative Example 5 Titanium-coated silica *3	76	81	84	88	99	98	97	97
Comparative Example 6 Titanium dioxide *4	3	12	24	36	57	69	77	81
Comparative Example 7 Titanium-coated sericite *5	18	26	32	39	81	84	84	85
Comparative Example 8 Iron oxide & silica coated mica *6	21	30	40	47	58	74	88	89
Comparative Example 9 Iron oxide & silica coated mica *7	22	30	40	47	55	72	87	87
Coated powder obtained in Example 1	15	21	28	36	93	95	94	95
Coated powder obtained in Example 2	20	27	34	42	98	99	98	98
Coated powder obtained in Example 3	40	50	58	66	99	99	99	99
Coated powder obtained in Example 4	53	62	69	73	99	99	99	99

*1: Silica microbead 1500 (Shokubai Kasei Kogyo K.K.)
*2: Silica coated with titanium at 20%
*3: Silica coated with titanium at 5%
*4: Anatase-type titanium dioxide (Tiepeek A-100, Ishihara Sangyo Kaisha, Ltd.)
*5: Sericite coated with titanium at 30%
*6: Mica coated with a mixture of iron and silica at 2% and 10%
*7: Mica coated with a mixture of iron and silica at 2% and 50%

As it is apparent from the results of Table 1, the respective powders of the Examples can adjust the linear transmittance at each wavelength by the weight ratio of silica (powder as a forming core) : titanium or zirconia (first layer) : silica (second layer) of the coated powder, and the amount of total light transmission shows the value near 100%. This characteristic is not seen in other single component powders or one-layer coated powders.

Next, foundations having the compositions shown in Table 2 were prepared using those powders. The results obtained by measuring linear transmittance and total transmittance of each foundation are shown in Table 3.

Table 2

	Comparative Example									Example			
	10	11	12	13	14	15	16	17	18	5	6	7	8
Powder of Comparative Example 1	40												
Powder of Comparative Example 2		40											
Powder of Comparative Example 3			40										
Powder of Comparative Example 4				40									
Powder of Comparative Example 5					40								
Powder of Comparative Example 6						40							
Powder of Comparative Example 7							40						
Powder of Comparative Example 8								40					
Powder of Comparative Example 9									40				
Powder of Example 1										40			
Powder of Example 2											40		
Powder of Example 3												40	
Powder of Example 4													40
Yellow iron oxide	3												
Red iron oxide	1												
Methyl paraben	0.2												
Talc	20.8												
Sericite	20												
Titanium oxide	5												
Dimethyl polysiloxane	10												

Table 3

	Linear transmittance (nm)				Total transmittance (nm)			
	400	500	600	700	400	500	600	700
Comparative Example 10	60	65	70	70	90	92	92	94
Comparative Example 11	55	62	67	67	90	92	92	94
Comparative Example 12	10	16	16	24	87	90	91	90
Comparative Example 13	8	10	20	26	60	62	65	68
Comparative Example 14	59	70	72	75	86	89	90	91
Comparative Example 15	2	10	22	25	50	53	57	66
Comparative Example 16	10	16	17	25	50	53	55	63
Comparative Example 17	10	15	18	26	51	53	55	62
Comparative Example 18	9	16	15	23	45	55	68	68
Example 5	10	15	19	28	82	85	87	89
Example 6	15	20	22	29	86	89	90	90
Example 7	30	38	41	44	86	90	92	90
Example 8	47	52	63	60	87	91	93	91

From the results shown in Table 3, it became apparent that even when the coated powder of the present invention is applied to a foundation, its characteristics are maintained and the total lightness is not decreased.

Industrial Applicability

The coated powder of the present invention can adjust the amount of transmitted light in linear direction by the compositional ratio of components,

and also the total transmission amount maintains nearly 100% even in any wavelength region. This characteristic can be maintained even when applied to cosmetics or paints. For this reason, lightness of cosmetics, paints, or the like after coating does not substantially deteriorate. Thus the coated powder is extremely useful.

What is claimed is:

1. A coated powder comprising (A) powder having a refractive index of 1.3 to 1.8 as a core, (B) a coating layer of a material having a refractive index of 1.9 to 3.1 on the powder (A), and (C) a coating layer of a material having a refractive index of 1.3 to 1.8 on the coating layer (B).

2. The coated powder as claimed in claim 1, wherein an amount of the coating layer (B) consisting of the material having a refractive index of 1.9 to 3.1 is 1 to 50% by weight based on the total amount of the coated powder, and an amount of the coating layer (C) consisting of the material having a refractive index of 1.3 to 1.8 is 1 to 30% by weight based on the total amount of the coated powder.

3. The coated powder as claimed in claim 1 or 2, wherein the material having a refractive index of 1.3 to 1.8 is silica, and the material having a refractive index of 1.9 to 3.1 is titania and/or zirconia.

4. The coated powder as claimed in any one of claims 1 to 3, wherein the powder as a core has a spherical shape.

5. A cosmetic prepared by blending the coated powder as claimed in any one of claims 1 to 4.

ABSTRACT

Coated powder is obtained by applying a material having a refractive index of 1.9 to 3.1 to powder having a refractive index of 1.3 to 1.8 as a core and further applying a material having a refractive index of 1.3 to 1.8 to the coated core. When this powder is used for cosmetics or paints, natural coloring can be accomplished without deteriorating lightness because a screening effect is not high.

DECLARATION AND POWER OF ATTORNEY - USA PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled " COATED POWDER AND COSMETIC PREPARED BY BLENDING THE SAME "

the specification of which:

(a) ☐ is attached hereto; or

(b) ☐ was filed on _____ as ☐ Application No. 0 /_____ or ☐ Express Mail No., as Application No. not yet known _____ and was amended on _____ (if applicable); or

(c) ☒ was described and claimed in PCT International Application No. PCT/JP97/01025 filed on March 26, 1997 and as amended under PCT Article 19 on _____ (if any) and/or under PCT Article 34 on _____ (if any).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above;

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56;

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 of any foreign application(s) for patent, design or inventor's certificate or any PCT international application(s) listed below and have also identified below any foreign application(s) for patent, design or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed for the same subject matter having a filing date before that of the application(s) of which priority is claimed:

PRIOR FOREIGN APPLICATION(S)

COUNTRY (OR INDICATE IF PCT)	APPLICATION NUMBER	DATE OF FILING (day, month, year)	PRIORITY CLAIMED UNDER 37 U.S.C. § 119
Japan	8-266680	17/09/1996	☒ YES NO ☐
			☐ YES NO ☐
			☐ YES NO ☐
			☐ YES NO ☐
			☐ YES NO ☐

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below, and insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code § 112, I acknowledge the duty to disclose to the U.S. Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56, which became available between the filing date of the prior application and the national or PCT international filing date of this application:

KNOBBE, MARTENS, OLSON & BEAR, LLP
620 NEWPORT CENTER DR 16TH FLOOR NEWPORT BEACH, CA 92660
(949) 760-0404 FAX (949) 760-9502

Prior U.S.A. Application(s)

Application No.: _____ Filing Date: _____ Status: _____

POWER OF ATTORNEY: I hereby appoint the registrants of Knobbe, Martens, Olson & Bear, LLP, 620 Newport Center Drive, Sixteenth Floor, Newport Beach, California 92660, Telephone (949) 760-0404, Customer No. 20,995.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful, false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor: Kazuhiro NISHIKATA

Inventor's signature Kazuhiro Nishikata Day 3rd Month March Year 1999

Residence (prefecture and country only): Yokohama-shi, Kanagawa, Japan JPX

Citizenship: Japan

Post Office Address: c/o POLA CHEMICAL INDUSTRIES INC., YOKOHAMA-KENKYUSHO, 27-1, Takashimadai, Kanagawa-ku, Yokohama-shi, Kanagawa 211-0833 Japan

Full name of second inventor: Hirochika NISHIMURA

Inventor's signature Hirochika Nishimura Day 3rd Month March Year 1999

Residence (prefecture and country only): Yokohama-shi, Kanagawa, Japan JPX

Citizenship: Japan

Post Office Address: c/o POLA CHEMICAL INDUSTRIES INC., YOKOHAMA-KENKYUSHO, 27-1, Takashimadai, Kanagawa-ku, Yokohama-shi, Kanagawa 211-0833 Japan

Full name of third inventor: _____

Inventor's signature _____ Day ___ Month _____ Year _____

Residence (prefecture and country only): _____

Citizenship: _____

Post Office Address: _____

Send Correspondence To:
KNOBBE, MARTENS, OLSON & BEAR, LLP
Customer No. 20,995

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